



THE
ONTARIO WATER RESOURCES
COMMISSION

WATER POLLUTION SURVEY

of the

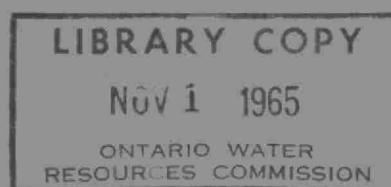
VILLAGE OF GLENCOE

COUNTY OF MIDDLESEX

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July, 1965



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R E P O R T

on a

Water Pollution Survey

of the

Village of Glencoe

County of Middlesex

July 19 and 20, 1965

Division of Sanitary Engineering

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R E P O R T

ONTARIO WATER RESOURCES COMMISSION

GENERAL

A water pollution survey of the Village of Glencoe was conducted by the Commission on July 19 and 20, 1965. The survey included the locating and sampling of surface-water drains and the receiving stream Newbiggen Creek, a tributary of the Thames River. Industries with significant waste discharges were also investigated by the Commission. Mr. F. Hamilton, Reeve, and Mr. T.W. Diamond, Clerk-Treasurer, Village of Glencoe were interviewed regarding the investigations.

The 1965 Ontario Municipal Directory reported that the Village of Glencoe had a 1964 assessed population of 1,206. Individual septic tank systems are employed to dispose of sanitary sewage from the municipality. A large number of these units are known to be connected to municipal storm drains resulting in the serious pollution of the receiving watercourses. An engineering firm was engaged by the municipality and a report was submitted by Mr. James D. Nisbet, Consulting Engineer, in January 1964 outlining a proposed sewage collection and treatment system for the village.

INTERPRETATION OF ANALYSES

In order to appreciate the significance of the laboratory analyses of samples obtained during the survey, the OWRC objectives are given.

The 5-Day Biochemical Oxygen Demand (BOD) should not exceed 4 parts per million (ppm) in a stream or watercourse. A coliform count (Membrane Filter Method) in excess of 2,400 in a stream is regarded as being indicative of pollution.

The objective for drain effluents is BOD and suspended solids content not in excess of 15 ppm. The presence of detergents is associated with sanitary sewage.

INVESTIGATIONS

Surface-Water Drains

The various storm water drains are indicated on an accompanying map of the Village of Glencoe.

TGG 75.6 W Elizabeth Street Drain

The storm sewer discharges into an open drain at the northeast side of the Canadian National Railway property on the main street. The watercourse then flows in a southeasterly direction and into a tributary of Newbiggen Creek.

<u>Date</u>	<u>5-Day BOD (ppm)</u>	<u>Total Solids (ppm)</u>	<u>Susp. Solids (ppm)</u>	<u>Diss. Solids (ppm)</u>	<u>Anionic Detergents as ABS (ppm)</u>	<u>M.F. Coliform Count per 100 ML</u>
July 19/65	270	11,074	147	10,927	6.0	80,000,000

These analyses reveal that serious pollution had occurred as a result of sanitary sewer connections to the drain.

TGG 75.0 W Parkhouse Road Drain

Wastes from the south section of Glencoe are discharged into this drain.

<u>Date</u>	5-Day BOD (ppm)	Total Solids (ppm)	Susp. (ppm)	Diss. (ppm)	Anionic Detergents as ABS (ppm)	M.F. Coliform Count per 100 ML
July 19/65	54	934	45	889	11.0	39,000,000

These results are also indicative of serious pollution.

TGG 74.9 W Drain at Highway 80 -South Limits of Glencoe

It is probable that this drain serves a section of Glencoe and the adjoining Township of Mosa.

<u>Date</u>	5-Day BOD (ppm)	Total Solids (ppm)	Susp. (ppm)	Diss. (ppm)	Anionic Detergents as ABS (ppm)	M.F. Coliform Count per 100 ML
July 20/65	540	4,470	3,218	1,252	11.0	90,000,000

As indicated by these results, the drain is a serious source of pollution.

Newbiggen Creek

Newbiggen Creek, a tributary of the Thames River, was investigated.

TG 74.5 Newbiggen Creek, above Glencoe

<u>Date</u>	5-Day BOD (ppm)	Total (ppm)	<u>Solids</u> Susp. (ppm)	Diss. (ppm)	Anionic Detergents as ABS (ppm)	M.F. Coliform Count per 100 ML
July 20/65	4.0	468	87	381	0.0	12,000

TGG (W) 74.0 West Tributary from Glencoe

<u>Date</u>	5-Day BOD (ppm)	Total (ppm)	<u>Solids</u> Susp. (ppm)	Diss. (ppm)	Anionic Detergents as ABS (ppm)	M.F. Coliform Count per 100 ML
July 20/65	3.6	994	98	896	3.4	3,900

TGG (E) 74.2 East Tributary from Glencoe

No flow at the time of the investigation.

TG 73.0 Newbiggen Creek at Highway No. 2 below Glencoe

<u>Date</u>	5-Day BOD (ppm)	Total (ppm)	<u>Solids</u> Susp. (ppm)	Diss. (ppm)	Anionic Detergents as ABS (ppm)	M.F. Coliform Count per 100 ML
July 20/65	9.0	984	127	857	1.3	800,000

Deterioration in the quality of the stream was evident below Glencoe.

Industries

Certain industries were investigated during the survey.

Glencoe Creamery

The plant is owned and operated by Messrs. B. Smith and G. McNaughton.

Plant wastes are discharged into a septic tank system which is connected to a municipal storm drain. The volume of waste could not be determined since water is obtained from the municipal supply and a private well. Approximately 1.5 million gallons per month is obtained from the Glencoe Public Utilities Commission. The amount obtained from the private supply reportedly exceeds this volume. The total volume of waste being discharged probably exceeds 125,000 gpd. A great deal of this is uncontaminated cooling water and could possibly be separated from other wastes and discharged into a storm sewer. Strong wastes could be directed to the sanitary sewer system which is contemplated in the future.

A sample was obtained of the waste being discharged from the plant.

<u>Date</u>	5-Day BOD (ppm)	Total (ppm)	<u>Solids</u> Susp. (ppm)	Diss. (ppm)	Anionic Detergents as ABS (ppm)	pH at Lab
July 20/65	82	694	52	642	0.1	7.1

Treatment of the waste is required.

Highland Dairy

The milk pasteurization plant is owned by Mr. L.F. Pole.

Wastes resulting from plant operations are discharged into a septic tank which is connected to a municipal storm sewer.

The Glencoe Public Utilities Commission advised that the dairy is supplied with approximately 7 million gallons of water per month. An undetermined volume is also obtained from a private well. It would be difficult to estimate the volume of waste requiring treatment. A large volume of water is frequently used in milk plants for cooling purposes. Large volumes of uncontaminated cooling water should not be included in any future municipal sanitary sewers.

A grab sample was obtained of the waste being discharged.

<u>Date</u>	5-Day BOD (ppm)	Total Solids (ppm)	Susp. (ppm)	Diss. (ppm)	Anionic Detergents as ABS (ppm)	pH at Lab
July 20/65	530	2,676	174	2,502	0.0	12.2

This constitutes a strong waste and complete treatment would be required in a future municipal sewage treatment system.

Clark Brothers Abattoir

Mr. R. Clark, owner and operator, was interviewed regarding the disposal of plant wastes.

The volume of wastes resulting from plant operations could not be determined since water is mainly obtained from an unmetered well located on the property. The Glencoe Public

Utilities Commission advised however, that an average of 446,700 gallons of water per month were obtained from the municipality during 1964. Approximately 25 cattle and 25 hogs are slaughtered each week. The wastes resulting from plant operations are discharged into a septic tank and field tile disposal system, which is connected to a ditch. Killing operations were not being carried out at the time of inspection, and consequently there were no wastes being discharged. An investigation of the ditch below the plant property did not reveal serious pollution problems and it would appear that the waste was normally retained in the ditch above a main water-course.

It should be noted that the Clark Brothers Abattoir is mainly located in the Township of Ekfrid with only a small section of the plant being in Glencoe. Municipal officials advised that consideration had been given by the owner to join any future municipal sewerage scheme. If the plant were to be connected to a municipal system an effort should be made to separate any large volumes of uncontaminated cooling water. Blood waste should also be separated from other wastes if possible, and disposed in a satisfactory manner elsewhere.

Lyons of London

The waste from this firm was investigated by members

of the Division of Industrial Wastes. The plant operates for eight hours each day on a five day week. The waste results from the washing-softening operation on the hosiery produced. The estimated waste volume was 1,200 gpd and it was further estimated that the discharge was equivalent to that from 50 homes. A detailed report is being prepared.

National Tubular Products

This firm was in the process of moving from Glencoe to the City of Kitchener. The move was completed on July 23, 1965.

REFUSE DISPOSAL SITE

The municipal refuse disposal site, which is located in the southeast section of Glencoe, did not appear to be contributing to the pollution of any watercourse at the time of the investigations.

SUMMARY

Investigations conducted by the Commission on July 19 and 20, 1965, revealed that the Village of Glencoe was contributing to the serious pollution of Newbiggen Creek and tributaries.

Laboratory examination of samples obtained during the water pollution survey indicated that inadequately treated sanitary and industrial wastes were being discharged from

private and business premises into the storm drainage system, and into the receiving watercourses.

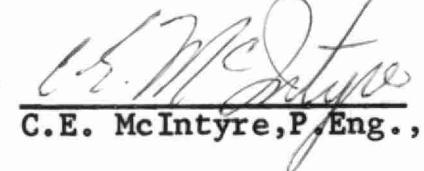
A municipal sewage treatment system is being proposed for the Village of Glencoe. The system is designed to provide adequate treatment of sanitary and industrial wastes.

RECOMMENDATIONS

The Village of Glencoe should proceed with the construction of the proposed municipal sewage collection and treatment system as soon as practical.

All of which is respectfully submitted,

District Engineer

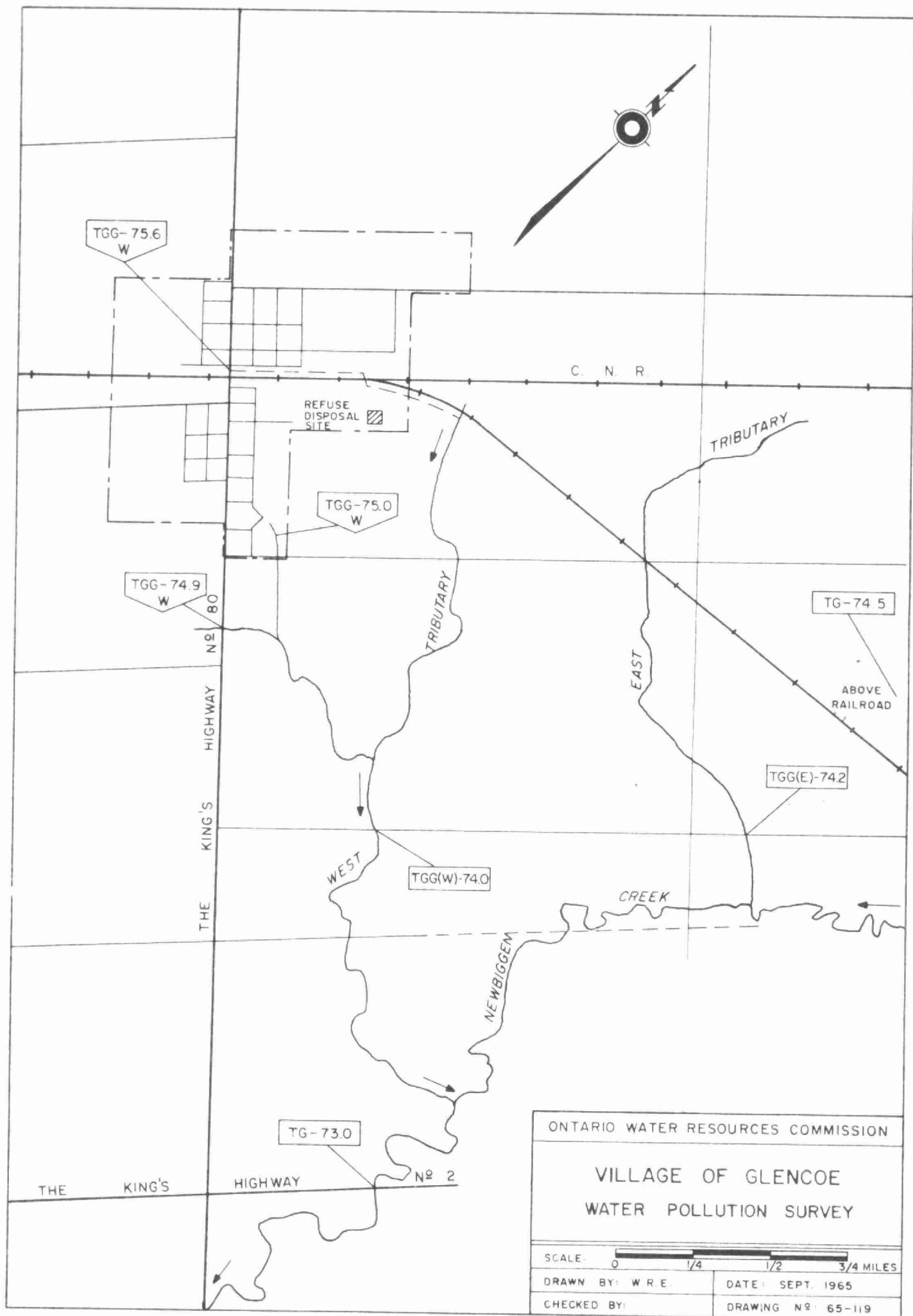

C.E. McIntyre, P.Eng.,

Approved by

J.R. Barr, Director.

/elb

Prepared by: Mr. B.G. Samuel,
Engineer's Assistant.



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